

# Recent IBM Patents

October through December 1962

## October 1962

|                                                                                                                                                                                                               |                                                        |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------|
| Sheet Shingling Apparatus . . . . .                                                                                                                                                                           | F. W. Walsh . . . . .                                  | 3,056,321 |
| Asynchronous Parallel Adder Deriving Intermediate Sums<br>and Carries by Repeated Additions and Multiplications . . . . .                                                                                     | E. G. Wagner . . . . .                                 | 3,056,552 |
| High Speed Mechanical Positioning Mechanism . . . . .                                                                                                                                                         | D. L. Stoddard . . . . .                               | 3,057,210 |
| Web Feeding Correction Device . . . . .                                                                                                                                                                       | R. L. Zurowski . . . . .                               | 3,057,293 |
| Toll Highway Recorder System . . . . .                                                                                                                                                                        | J. M. Cunningham and P. M. Kovach . . . . .            | 3,057,422 |
| Component Delivery and Cutoff Apparatus . . . . .                                                                                                                                                             | T. H. Cole and N. MacDonald, Jr. . . . .               | 3,057,528 |
| Tape Transport Apparatus . . . . .                                                                                                                                                                            | C. J. Fitch . . . . .                                  | 3,057,529 |
| Tape Feed Mechanism . . . . .                                                                                                                                                                                 | J. A. Weidenhammer and W. S. Buslik . . . . .          | 3,057,568 |
| Tape Feed Mechanism . . . . .                                                                                                                                                                                 | J. A. Weidenhammer . . . . .                           | 3,057,569 |
| Magnetic Transducer . . . . .                                                                                                                                                                                 | J. B. Clark . . . . .                                  | 3,057,967 |
| Arrangement for Setting the Recording Heads of<br>Magnetic Recording Machines . . . . .                                                                                                                       | R. K. Brunner . . . . .                                | 3,057,970 |
| Electrical Power Systems . . . . .                                                                                                                                                                            | J. E. Taunt . . . . .                                  | 3,058,006 |
| Amplitude Discriminator Circuit . . . . .                                                                                                                                                                     | G. L. Clapper . . . . .                                | 3,058,008 |
| Magnetic Recording and Reproducing System . . . . .                                                                                                                                                           | J. J. Hagopian . . . . .                               | 3,058,100 |
| Magnetic Recording . . . . .                                                                                                                                                                                  | B. I. Bertelsen and H. J. Kump . . . . .               | 3,058,112 |
| Fluid Apparatus . . . . .                                                                                                                                                                                     | H. A. Panissidi . . . . .                              | 3,058,310 |
| Recording Apparatus . . . . .                                                                                                                                                                                 | W. Hoffmann . . . . .                                  | 3,058,415 |
| Counter Failure Detector . . . . .                                                                                                                                                                            | A. P. Arneth, Jr. . . . .                              | 3,058,655 |
| Asynchronous Add-Subtract System . . . . .                                                                                                                                                                    | J. H. Pomerene . . . . .                               | 3,058,656 |
| Add Address to Memory Instruction . . . . .                                                                                                                                                                   | W. R. Demmer, W. C. Foin and F. B. Hartman . . . . .   | 3,058,659 |
| Ground Range Determining Apparatus Solving for<br>One Side of a Right Triangle . . . . .                                                                                                                      | W. P. Summers . . . . .                                | 3,058,661 |
| Evaporation Method . . . . .                                                                                                                                                                                  | G. J. Kahan and F. S. DeCormier . . . . .              | 3,058,842 |
| Composition of Epoxide Resin Methylol Phenol Ether,<br>Polyvinyl Methyl Ether, and Acid Anhydride Catalyst,<br>and Metal Substrate Coated Therewith, Especially a<br>Magnetic Signal Storage Device . . . . . | D. D. Johnson, R. Flores and M. J. Vogel . . . . .     | 3,058,844 |
| Method of Forming Superconductive Circuits . . . . .                                                                                                                                                          | G. J. Kahan . . . . .                                  | 3,058,851 |
| Method of Forming Superconductive Circuits . . . . .                                                                                                                                                          | H. L. Caswell and C. Chiou . . . . .                   | 3,058,852 |
| Position Sensing System . . . . .                                                                                                                                                                             | G. C. Anthony and F. A. Boyer . . . . .                | 3,059,120 |
| Magnetic Trigger . . . . .                                                                                                                                                                                    | N. F. Lockhart . . . . .                               | 3,059,122 |
| Circuit for Eliminating the Effect of Contact Bounce . . . . .                                                                                                                                                | G. L. Bond . . . . .                                   | 3,059,146 |
| Bifilar Thin Film Superconductor Circuits . . . . .                                                                                                                                                           | J. J. Lentz . . . . .                                  | 3,059,196 |
| Transfer Instruction . . . . .                                                                                                                                                                                | W. R. Demmer . . . . .                                 | 3,059,222 |
| Magnetic Memory Element and System . . . . .                                                                                                                                                                  | F. L. Post . . . . .                                   | 3,059,224 |
| Electronic Storage and Switching Circuits . . . . .                                                                                                                                                           | G. H. Perry, E. W. Shallow and G. R. Hoffman . . . . . | 3,059,225 |
| Control Chain . . . . .                                                                                                                                                                                       | T. E. Einsele . . . . .                                | 3,059,226 |
| Magnetic Record Processing Apparatus . . . . .                                                                                                                                                                | N. G. Cleveland . . . . .                              | 3,059,266 |
| Method of Making Electrical Circuit . . . . .                                                                                                                                                                 | W. A. Seabury and R. D. McNutt . . . . .               | 3,059,320 |
| Monitoring Apparatus . . . . .                                                                                                                                                                                | A. M. Fury and C. L. Smith . . . . .                   | 3,059,611 |
| Escapement Mechanism for Typewriter . . . . .                                                                                                                                                                 | L. E. Palmer . . . . .                                 | 3,059,751 |
| Document Handling System . . . . .                                                                                                                                                                            | J. E. Lisinski . . . . .                               | 3,059,753 |
| Memory Device . . . . .                                                                                                                                                                                       | N. N. Winogradoff . . . . .                            | 3,060,317 |
| Magnetic Core Gate . . . . .                                                                                                                                                                                  | J. J. Erickson and E. J. Nallin . . . . .              | 3,060,322 |
| Gate Having Stroke and Signal Input, Driven to Saturation<br>upon Coincidence, with Stretched Output . . . . .                                                                                                | A. W. Vinal . . . . .                                  | 3,060,325 |
| Three-Level Inverter Circuit . . . . .                                                                                                                                                                        | K. M. Trampel . . . . .                                | 3,060,330 |
| Power Assist Servosystem . . . . .                                                                                                                                                                            | R. E. Tomek . . . . .                                  | 3,060,360 |
| Core Array Temperature Responsive Apparatus . . . . .                                                                                                                                                         | W. Buchholz and E. C. Schuenzel . . . . .              | 3,060,418 |

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| Method for Producing a Form-Retaining Roll of<br>Extensible Tape . . . . . | D. W. Seager and A. B. Perry . . . . .     | 3,061,886 |
| Data Storage and Transfer Apparatus . . . . .                              | L. E. Farr, Jr. and J. P. Hammer . . . . . | 3,062,438 |

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| Multistable Magnetic Core Accumulator . . . . .                                                                                 | M. J. Kelly . . . . .                                      | 3,062,440 |
| Form Handling Apparatus . . . . .                                                                                               | H. R. Clarke . . . . .                                     | 3,062,531 |
| Card Advancing Mechanism . . . . .                                                                                              | M. J. Galatha . . . . .                                    | 3,062,532 |
| Continuously Operable Multi-Deck Hopper . . . . .                                                                               | J. M. Cunningham and F. L. Pratt . . . . .                 | 3,062,535 |
| Electrodynamic Relay . . . . .                                                                                                  | K. E. Hastings . . . . .                                   | 3,062,935 |
| Pulse Repetition Rate Converter . . . . .                                                                                       | B. L. Havens and M. G. Smith . . . . .                     | 3,063,013 |
| Magnetic Core Binary Counter . . . . .                                                                                          | R. A. Davis and G. E. Olson . . . . .                      | 3,063,038 |
| High Speed Reaction Drum . . . . .                                                                                              | E. A. Quade and W. E. Steele . . . . .                     | 3,063,041 |
| Dual Feed High Speed Lister . . . . .                                                                                           | F. A. Foss and R. L. Haug . . . . .                        | 3,063,366 |
| Format Control Device . . . . .                                                                                                 | J. D. Allen, Jr. . . . .                                   | 3,063,537 |
| Coding Transfer . . . . .                                                                                                       | D. H. Cronquist . . . . .                                  | 3,063,627 |
| Binary Counter . . . . .                                                                                                        | J. P. Beesley . . . . .                                    | 3,063,629 |
| Matrix Arithmetic System with Input and Output Error<br>Checking Circuits . . . . .                                             | H. M. Sierra . . . . .                                     | 3,063,636 |
| Transistor Amplifier Circuits for Square Waves, with Level<br>Setting and Noise Elimination . . . . .                           | W. W. Chou . . . . .                                       | 3,064,141 |
| Information Compression and Expansion System . . . . .                                                                          | J. Svigals and I. C. Liggett . . . . .                     | 3,064,239 |
| Apparatus for Translating Magnetically Recorded Binary Data . . . . .                                                           | L. H. Thompson . . . . .                                   | 3,064,243 |
| Method of Making a Magnetic Transducer . . . . .                                                                                | F. T. Kristiansen and H. W. Pexton . . . . .               | 3,064,333 |
| Core Array Using Coaxially Spaced Conductors . . . . .                                                                          | E. Gessner . . . . .                                       | 3,064,334 |
| Semiconductor Devices . . . . .                                                                                                 | F. H. Masterson . . . . .                                  | 3,064,341 |
| Automatic Tool Changer . . . . .                                                                                                | D. G. Pittwood . . . . .                                   | 3,064,502 |
| Specimen Identification Apparatus and Method . . . . .                                                                          | G. L. Shelton, Jr. . . . .                                 | 3,064,519 |
| Open End Carriage . . . . .                                                                                                     | M. B. Emig . . . . .                                       | 3,064,790 |
| Method and Apparatus for Verifying Punched Tape . . . . .                                                                       | R. A. Barbeau and D. K. Close . . . . .                    | 3,064,885 |
| Sensing Instruction Apparatus for Data Processing Machine . . . . .                                                             | A. W. Heineck, Jr. and J. R. Wood . . . . .                | 3,064,895 |
| Asynchronous Division Apparatus . . . . .                                                                                       | W. N. Carroll and C. J. Tilton . . . . .                   | 3,064,896 |
| Power Stacker . . . . .                                                                                                         | K. K. Stange and R. D. Durand . . . . .                    | 3,064,969 |
| Connecting Device . . . . .                                                                                                     | J. O. Schaefer . . . . .                                   | 3,065,008 |
| Compound Semiconductor Material Control . . . . .                                                                               | V. J. Lyons . . . . .                                      | 3,065,113 |
| Vapor Deposition of Heavily Doped Semiconductor Material . . . . .                                                              | J. C. Marinace . . . . .                                   | 3,065,116 |
| Low Flux Density Ferromagnetic Material . . . . .                                                                               | H. A. Aghajanian . . . . .                                 | 3,065,182 |
| Magnetic Transducer . . . . .                                                                                                   | O. Kornei . . . . .                                        | 3,065,311 |
| Electro-Optical Card Reader . . . . .                                                                                           | R. M. Blake and E. T. Shea . . . . .                       | 3,065,356 |
| Constant Carrier Parametric Oscillator Logic Circuit . . . . .                                                                  | W. L. McMillan . . . . .                                   | 3,065,357 |
| Current Driver Circuit . . . . .                                                                                                | I. Lee and R. Waxman . . . . .                             | 3,065,358 |
| Superconductor Pulsing Circuit . . . . .                                                                                        | J. B. Mackay . . . . .                                     | 3,065,359 |
| Single Shot Multivibrator Using Series-Resonant Cross-<br>Coupling for Resetting Fixed Time Interval after Triggering . . . . . | A. B. Benson . . . . .                                     | 3,065,362 |
| Pulse Generator . . . . .                                                                                                       | A. P. Speiser and H. Steinmann . . . . .                   | 3,065,366 |
| Temperature Stabilized Non-Linear Reactance Elements<br>and Circuits . . . . .                                                  | R. W. Landauer . . . . .                                   | 3,065,402 |
| Attenuators . . . . .                                                                                                           | W. R. Jones . . . . .                                      | 3,065,435 |
| Cryogenic Memory System . . . . .                                                                                               | L. P. Hunter . . . . .                                     | 3,065,459 |
| Floating Head . . . . .                                                                                                         | E. E. Altenau, T. W. Leverett and J. E. McGregor . . . . . | 3,065,460 |
| Magnetic Recording Apparatus . . . . .                                                                                          | W. Aronis . . . . .                                        | 3,065,461 |
| Flip-Flop Circuit having Pulse-Forming Networks in the<br>Cross-Coupling Paths . . . . .                                        | E. J. Slobodzinski and G. W. Neff . . . . .                | 3,066,231 |

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| Error Checking Devices . . . . .                                                | H. E. Eden . . . . .                                           | 3,066,601 |
| Hydraulic Actuator . . . . .                                                    | D. P. Darwin and R. M. Kellogg . . . . .                       | 3,066,859 |
| Device for Stacking Forms . . . . .                                             | M. Fiehl . . . . .                                             | 3,066,933 |
| Semiconductor Devices and Methods of Applying Metal<br>Films Thereeto . . . . . | W. E. Mutter . . . . .                                         | 3,067,071 |
| Motion Control Apparatus for Information Storage Drawers . . . . .              | D. C. Allais, F. A. Litz and N. A. Vogel . . . . .             | 3,067,333 |
| High Order Detector Circuit . . . . .                                           | E. B. Eichelberger . . . . .                                   | 3,067,335 |
| Electro-Erosion Apparatus . . . . .                                             | F. J. DeMaine . . . . .                                        | 3,067,358 |
| P-N Junction Position Determination . . . . .                                   | R. L. Anderson and M. J. O'Rourke . . . . .                    | 3,067,387 |
| Transistor In-Phase Current Amplifier . . . . .                                 | H. S. Yourke . . . . .                                         | 3,067,389 |
| Digit Extraction . . . . .                                                      | C. D. Southard . . . . .                                       | 3,067,406 |
| Cathode Ray Tube Printer . . . . .                                              | F. W. Schaaf . . . . .                                         | 3,067,407 |
| Electro-Optical Character Display System . . . . .                              | L. Fischle, W. Kulcke, P. Schweitzer and<br>J. Trapp . . . . . | 3,067,413 |
| Code Translating Circuit . . . . .                                              | M. J. Kelly . . . . .                                          | 3,067,414 |
| Phase Distortion Correction for High Density<br>Magnetic Recording . . . . .    | W. A. Hunt . . . . .                                           | 3,067,422 |
| Control Element for Computing Devices . . . . .                                 | D. J. Hinkein and W. W. Martin . . . . .                       | 3,067,937 |
| Polarized Light Control . . . . .                                               | A. C. Ruocchio and D. H. Schroeder . . . . .                   | 3,068,362 |
| Unipolar Generator . . . . .                                                    | A. Brunschweiler . . . . .                                     | 3,068,369 |

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| Magnetic Core Testing Device . . . . .                                                                                                              | W. G. Lamoreaux . . . . .                   | 3,068,380 |
| Magnetic Core Memory Making Process . . . . .                                                                                                       | C. Pouget . . . . .                         | 3,068,554 |
| Binary Digital Multiplier . . . . .                                                                                                                 | R. A. Cooper and J. J. Moyer . . . . .      | 3,069,085 |
| Matrix Switching and Computing Systems . . . . .                                                                                                    | M. Papo . . . . .                           | 3,069,086 |
| Consonant Response in Narrow Band Transmission . . . . .                                                                                            | E. Hopner and M. C. Andrews . . . . .       | 3,069,506 |
| Synchronization of Phase of (Dividing) Counter Output<br>Pulses by Continually Resetting Counter with Data Pulses . . . . .                         | K. B. Day, Jr. . . . .                      | 3,069,568 |
| Carrier-Logic Circuits Employing Microwave Transmission<br>Lines with Selective Impedance Switching on<br>Main Lines or on Stubs . . . . .          | H. P. Wolff . . . . .                       | 3,069,629 |
| Data Processing System . . . . .                                                                                                                    | H. A. Skovmand and K. R. Skovmand . . . . . | 3,069,659 |
| Transducer Apparatus . . . . .                                                                                                                      | G. E. Doody . . . . .                       | 3,069,667 |
| Electronic Selection Means . . . . .                                                                                                                | J. L. Sweeney . . . . .                     | 3,069,678 |
| Cleaning Tape for Information Sensing Apparatus . . . . .                                                                                           | E. H. Valentine . . . . .                   | 3,069,815 |
| Electro-Optic Light Switch . . . . .                                                                                                                | I. Ames . . . . .                           | 3,069,973 |
| Fluid Operated Logical Devices . . . . .                                                                                                            | H. H. Glattli . . . . .                     | 3,070,295 |
| Serial Delay Line Adder . . . . .                                                                                                                   | F. C. Chiang . . . . .                      | 3,070,305 |
| Diffusion in Semiconductor Material . . . . .                                                                                                       | V. J. Lyons . . . . .                       | 3,070,466 |
| Magnetic Logical Circuits . . . . .                                                                                                                 | E. Bloch and R. C. Paulsen . . . . .        | 3,070,706 |
| Magnetic Driver Device . . . . .                                                                                                                    | I. P. V. Carter . . . . .                   | 3,070,707 |
| Logical Circuits . . . . .                                                                                                                          | F. H. Dill . . . . .                        | 3,070,708 |
| Inverter Circuit and Complementing Flip-Flop Using<br>Constant Current Sources and Isolated Collector to<br>Emitter Connections . . . . .           | E. J. Slobodzinski . . . . .                | 3,070,709 |
| Three Stable State Count Down Device . . . . .                                                                                                      | R. A. Leightner . . . . .                   | 3,070,713 |
| Apparatus Utilizing Minority Carrier Storage for Signal<br>Storage, Pulse Reshaping, Logic Gating, Pulse Amplifying<br>and Pulse Delaying . . . . . | J. C. Logue . . . . .                       | 3,070,779 |
| Master Timer . . . . .                                                                                                                              | C. F. Weiss, Jr. and A. B. Benson . . . . . | 3,070,780 |
| Memory Array . . . . .                                                                                                                              | J. S. Eggenberger . . . . .                 | 3,070,782 |